ARCHIVES OF
Biochemistry and Biophysics

Volume 136 • 1970

Executive Editors

S. P. Colowick
R. W. Estabrook
V. Ginsburg
C. H. W. Hirs
F. M. Huennekens
S. Kaufman
F. F. Nord
P. K. Stumpf
S. N. Timasheff
S. Udenfriend

Editors

S. J. Ajl
G. Ashwell
J. Botts
R. D. Cole
E. H. Cordes
H. Edelhoch
H. V. Gelboin
D. E. Green
O. Greengard
E. Gross
L. P. Hager
H. O. Halvorson
D. J. Hanahan
Y. Hatefi
O. Hayaishi
L. A. Heppel
R. L. Hill
L. E. Hokin
B. L. Horecker
F. E. Hunter
A. T. Jagendorf
W. Kauzmann
T. E. King
A. Kleinzeller
W. Konigsberg
D. Kritchevsky
J. M. Lowenstein
H. R. Mahler
B. G. Malmstrom
C. L. Markert
A. S. Mildvan
L. Packer
G. Palmer
L. H. Piette
H. C. Pitot
G. Popjak
R. R. Porter
J. Preiss
J. C. Rabinowitz
N. S. Radin
L. J. Reed
H. Rudney
D. R. Sanadi
A. San Pietro
W. A. Schroeder
M. Sela
E. N. Shaw
D. Shemin
P. Siekevitz
M. V. Simpson
T. T. Tchen
O. Touster
C. R. Treadwell
H. Weissbach
C. A. West
I. Zelitch
D. M. Ziegler

ACADEMIC PRESS
New York and London

UNIVERSITY OF HAWAII
LIBRARY

LIBRARY USE ONLY

Copyright © 1970, by Academic Press, Inc.

ALL RIGHTS RESERVED

No part of this volume may be reproduced in any form by photostat, microfilm, by retrieval system, or any other means, without written permission from the publishers.

Made in the United States of America

ARCHIVES OF BIOCHEMISTRY AND BIOPHYSICS 136, iii–v (1970)

Contents of Volume 136

Number 1, January 1970

IUPAC-IUB Combined Commission on Biochemical Nomenclature; Abbreviations and Symbols for Chemical Names of Special Interest in Biological Chemistry; Revised Tentative Rules (1965) 1

IUPAC-IUB Commission on Biochemical Nomenclature. Revised Tentative Rules for Nomenclature of Steroids 13

H. Kurt Jacobs and Karl F. Guthe. Anions and the Contraction of Glycerol-Extracted Muscle Fibers 36

Hiroko Yamazaki, Shohei Ohishi, and Isao Yamazaki. CO as a Ligand of Photosensitive P-630 Transformed from Horseradish Peroxidase in the Presence of Indole-3-Acetic Acid 41

Kenneth T. N. Yue, Dwight J. Mulford, and Percy J. Russell. The Metabolism of 2-Amino-2-Methylpropanol in Young Rats 47

P. J. Davey, J. M. Haslam, and Anthony W. Linnane. Biogenesis of Mitochondria. 12. The Effects of Aminoglycoside Antibiotics on the Mitochondrial and Cytoplasmic Protein-Synthesizing Systems of Saccharomyces cerevisiae 54

Michael T. Ryan and Gail Gibbs. Analysis of Ultraviolet Spectral Perturbations Arising in the Interaction of Steroids and Human Serum Albumin 65

Lloyd A. Culp, Elizabeth Dore, and Gene M. Brown. Methylated Bases in DNA of Animal Origin 73

Sidney Pestka. Studies on the Formation of Transfer Ribonucleic Acid-Ribosome Complexes. VIII. Survey of the Effect of Antibiotics on *N*-Acetyl-Phenylalanyl-Puromycin Formation: Possible Mechanism of Chloramphenicol Action 80

Sidney Pestka. Studies on the Formation of Transfer Ribonucleic Acid-Ribosome Complexes. IX. Effect of Antibiotics on Translocation and Peptide Bond Formation 89

D. F. Bateman, T. Kosuge, and W. W. Kilgore. Purification and Properties of Uronate Dehydrogenase from *Pseudomonas syringae* 97

Johannes Everse, Nathan O. Kaplan, and Schimon Schichor. Accumulation of Oxidized Diphosphopyridine Nucleotide in Mouse Liver after Administration of Reduced Diphosphopyridine Nucleotide 106

Stuart Smith and S. Abraham. Fatty Acid Synthesis in Developing Mouse Liver ... 112

M. Somlo. Respiration-Linked ATP Formation by an "Oxidative Phosphorylation Mutant" of Yeast 122

Sergio E. Bustos-Valdes and Alexander L. Dounce. Comparison of Rat Liver and Calf Thymus Histone Fractions by Molecular Exclusion Chromatography and Ultracentrifugation 134

G. D. Clark-Walker and J. Lascelles. Cytochrome c_{550} from *Spirillum itersonii*: Purification and Some Properties 153

John R. Kongsvik and Luigi Messineo. The Isolation and Characterization of Deoxyribonucleoproteins from Human Spleen 160

M. G. Sargent and J. O. Lampen. Organization of the Membrane-Bound Penicillinases of *Bacillus licheniformis* 167

Herbert Z. Kupchik and W. Eugene Knox. Assays of Glutamine and its Aminotransferase with the Enol-Borate of Phenylpyruvate 178

John R. Maley and Thomas C. Bruice. Catalytic Reactions Involving Azomethines XII: Transamination of 1-Methyl-3-hydroxy-4-formylpyridinium Chloride 187

Rosalia B. Frydman and Benjamin Frydman. Purification and Properties of Porphobilinogen Deaminase from Wheat Germ 193

A. J. Dunn. The Effects of Sulfhydryl Reagents on Rat Liver Ribosomes and Polyribosomes 203
R. W. Swick, S. L. Tollaksen, S. L. Nance, and J. F. Thomson. The Unique Distribution of Ornithine Aminotransferase in Rat Liver Mitochondria 212
J. G. Georgatsos, O. Antonoglou, and C. Gabrielides. Incorporation of 5-Iodo-2-Deoxyuridine-^{131}I into Nuclear and Mitochondrial DNA of Normal and Malignant Mouse Tissues 219
Kenneth E. Neet and Sandra E. Brydon. Sedimentation of Chemically Modified Chymotrypsin 223
P. Leslie Dutton, and W. Charles Evans. Inhibition of Aromatic Photometabolism in *Rhodopseudomonas palustris* by Fatty Acids 228
C. M. Tsai, N. Holmberg, and K. E. Ebner. Purification, Stabilization, and Properties of Bovine Mammary UDP-Galactose 4-Epimerase 233
Philip S. Perlman and H. R. Mahler. Intracellular Localization of Enzymes in Yeast 245
Chandra S. Pande and Rapier H. McMenamy. Thiocyanate Binding with Modified Bovine Plasma Albumins 260
W. S. Lynn. Redox Potentials and Phosphorylative Efficiency of Mitochondria 268
C. van der Drift, F. E. De Windt, and G. D. Vogels. Allantoate Hydrolysis by Allantoate Amidohydrolase 273
Hugh W. Middleton. Kinetics of Monovalent Ion Activation of the (Na^+–K^+)-Dependent Adenosine Triphosphatase and a Model for Ion Translocation and Its Inhibition by the Cardiac Glycosides 280
O. Tsolas and B. L. Horecker. Isoenzymes of Transaldolase in *Candida utilis*. I. Isolation of Three Isoenzymes from Yeast Extracts 287
O. Tsolas and B. L. Horecker. Isoenzymes of Transaldolase in *Candida utilis*. II. The Molecular Properties of Transaldolase Isoenzymes I and III and the Conditions for Hybridization to Form Isoenzyme II. With an Appendix by C. L. Sia 303

COMMUNICATION

W. Banks and C. T. Greenwood. Comments on "Enzymic Methods for the Microdetermination of Glycogen and Amylopectin, and Their Unit Chain-Lengths" 320
Erratum 323
Author Index 324

Number 2, February 1970

Abel Schejter and Atara Bar-Eli. Preparation and Properties of Crosslinked Water-Insoluble Catalase 325
Taneaki Higashi, Eitan Bogin, and Arnold F. Brodie. Oxidative Phosphorylation in Fractionated Bacterial Systems. XLII. The Effect of Coupling Factors on Urea-Treated Particles from *M. phlei* 331
Eitan Bogin, Taneaki Higashi, and Arnold F. Brodie. Oxidative Phosphorylation in Fractionated Bacterial Systems. XLIII. Coupling Factors Associated with the NAD^+-Linked Electron Transport Pathway 337
Richard M. Arneson. Substrate-Induced Chemiluminescence of Xanthine Oxidase and Aldehyde Oxidase 352
Linda Nonno, Harvey Herschman, and Lawrence Levine. Serologic Comparisons of the Carbonic Anhydrases of Primate Erythrocytes 361
David I. Wilkinson. Positional Isomers of Monoene and Diene Fatty Acids of Human Skin Epidermal Cells 368
May C. Robertson, Frances A. Stephenson, and Theodore Winnick. Biosynthesis of Growth Hormone in Ribosomal Preparations of Bovine Anterior Pituitary Tissue 372
William S. Allison and Michael J. Connors. The Activation and Inactivation of the Acyl Phosphatase Activity of Glyceraldehyde-3-Phosphate Dehydrogenase 383
Lawrence R. Gurley and Julia M. Hardin. The Metabolism of Histone Fractions. III. Synthesis and Turnover of Histon fi 1 392
Siwo R. De Kloet. The Formation of Ribonucleic Acid in Yeast: Hybridization of High Molecular Weight RNA Species to Yeast DNA 402

Frits C. Stevens, Douglas M. Brown, and Emil L. Smith. Some Properties of Soybean Lipoxygenase 413
R. Howk and T. Y. Wang. DNA Polymerase from Rat Liver Chromosomal Proteins. II. Formation of an Enzyme-Template Complex and Association of Product with Template 422
Iwao Suzuka, Kenji Sekikawa, and Sigeaki Tanaka. Binding of *N*-Acetylphenylalanyl tRNA to Ribosomes—Comparison with the Binding of Phenylalanyl tRNA 430
Carl Cotman, David H. Brown, Betty W. Harrell, and Norman G. Anderson. Analytical Differential Centrifugation: An Analysis of the Sedimentation Properties of Synaptosomes, Mitochondria and Lysosomes from Rat Brain Homogenates 436
Rudolph V. LaMotta, Charles L. Woronick, and Ralph F. Reinfrank. Multiple Forms of Serum Cholinesterase: Molecular Weights of the Isoenzymes 448
Kiichi Imamura, Joseph A. Duke, and Manuel Morales. Studies on Myosin Catalysis and Modification 452
Milton Tabachnick, Frederick J. Downs, and Nicholas A. Giorgio, Jr. Thyroxine-Protein Interactions. VI. Structural Requirements for Binding of Benzene Derivatives to Thyroxine-Binding Sites on Human Serum Albumin 467
R. W. Gracy, A. G. Lacko, L. W. Brox, R. C. Adelman, and B. L. Horecker. Structural Relations in Aldolases Purified from Rat Liver and Muscle and Novikoff Hepatoma 480
Yukio Ikehara, Hideya Endo, and Yoshimi Okada. The Identity of the Aldolases Isolated from Rat Muscle and Primary Hepatoma 491
C. J. Coscia, L. Botta, and R. Guarnaccia. On the Mechanism of Iridoid and Secoiridoid Monoterpene Biosynthesis 498
Randolph L. Rill and Irving M. Klotz. Tyrosine Ligands to Iron in Hemerythrin .. 507
J. Fernando, B. L. Horecker, and S. Pontremoli. Fructose Diphosphatase from Rabbit Muscle. III. Isolation of Enzyme-Substrate and Enzyme-Adenosine Monophosphate Complexes 515
Harold Papkoff and Jose Gan. Bovine Interstitial Cell-Stimulating Hormone: Purification and Properties 522
Barbara J. Allan, Noah I. Zager, and Patricia J. Keller. Human Pancreatic Proteins: Amylase, Proelastase, and Trypsinogen 529
Thomas E. Conover. On the Occurrence of Respiratory Components in Calf Thymus Nuclei. I. Low-Temperature Spectra 541
Thomas E. Conover. On the Occurrence of Respiratory Components in Calf Thymus Nuclei. II. Cytochrome Oxidase Activity 551
Betty Revsin, Ernest D. Marquez, and Arnold F. Brodie. Cytochromes from *Mycobacterium phlei*. II. Ascorbate Reduction of an Isolated Cytochrome (a + a_3) (o) Complex 563

COMMUNICATIONS

Pill-Soon Song, William C. Herndon, and Jerold Feuer. A Perturbational Molecular Orbital Treatment of Flavin-Purine Complexes 574
W. F. Hieb and Morton Rothstein. Isolation from Liver of a Heat-Stable Requirement for Reproduction of a Free-Living Nematode 576
Gary A. Sojka, Hudson H. Freeze, and Howard Gest. Quantitative Estimation of Bacteriochlorophyll *in situ* 578
F. M. Sirotnak and W. A. Willaims. A Dissociable Mutant Form of Dihydrofolate Reductase from *Diplococcus pneumoniae* 580
David F. Wilson and P. Leslie Dutton. The Oxidation-Reduction Potentials of Cytochromes *a* and a_3 in Intact Rat Liver Mitochondria 583
Takayuki Ozawa, Masako Hagihara, Naoki Yamanaka, and Kunio Yagi. Mitochondrial Protein Biosynthesis Insensitive to Arsenate or Rutamycin 585
Erratum 588
Author Index 589
Subject Index 590